

REMARKS

Applicants thank the Examiner for total consideration given the present application. Claims 1-17 are pending in the present application. Claim 1 is independent. By this response, claims 1, 2, 4, 6, 7, 10 - 14, 16 and 17 are amended. Favorable reconsideration and allowance of the present application are respectfully requested in view of the following remarks.

Objections to the Abstract

The abstract is objected to for the inclusion of means language. Applicants hereby amend the abstract in accordance with the Examiner's suggestion. Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

Objections to the Claims

Claims 1 – 17 are objected to due to informalities. Specifically, claims 1, 4, and 7 are objected to on antecedent basis grounds, and claim 2 is objected to as being unclear. Applicants hereby amend these claims to resolve the above antecedent basis and clarity issues. Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

Rejection under 35 U.S.C. §112

Claim 17 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants hereby amend claim 17 to more clearly specify the method step described therein. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

35 U.S.C. § 103 Rejection – Fox and Vilsmeier

Claims 1-5 and 7-17 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Fox et al. (USPN 2003/0050527 A1) (hereinafter "Fox") in view of Vilsmeier (USPN 7,194,295 B2) (hereinafter "Vilsmeier"). Insofar as it pertains to the presently pending claims, Applicants respectfully traverse this rejection.

Claim 1

Independent claim 1 recites “A method for modeling different functional areas of a brain within a second head to focus magnetic stimulation and/or visualize the results of magnetic stimulation techniques, magnetoencephalography (MEG) or electroencephalography (EEG),, the method comprising: a) determining the location of at least one functional area of a brain within a first head in three-dimensional space, b) determining the external dimensions of the second head , and c) scaling location data of said at least one functional area of said first head in three-dimensional space to correlate with said external dimensions of said second head, thereby defining the locations of the at least one functional area in said second head such that the location data of the functional areas of the brain of said second head are modeled without anatomical images of the internal structures of said second head.”

Prior Art

Fox teaches a magnetic stimulation treatment planning and image guidance apparatus to carryout the treatment (paragraph [0025]). Fox specifically teaches that functional MRI or PET is used to map out an internal structure of a patient’s head (paragraphs [0025]-[0028]).

Vilsmeier teaches a method of linking a generic model with patient characteristic data to obtain body structure data to assist in pre-operative treatment planning. More specifically, Vilsmeier fuses an actual patient image with generic model by surface matching of key landmarks, either natural or artificial. Vilsmeier’s image fusion with the generic model allows a surgeon to introduce treatment devices to a desired location in reference to the landmarks.

Brain Function vs. Brain Structure

Applicants respectfully submit that neither Fox nor Vilsmeier teach or suggest mapping and correlating brain functional areas from a reference brain to a second brain based on the external dimensions of the head that contains the second brain. Vilsmeier is concerned only with structural correlation and does not address any of the specific concerns or issues associated with

brain functional areas. Although it may be possible to correlate the structural aspects of one brain from a first head to a second head, thereby getting an estimate of where in the second head those structures are, such correlation does not translate directly into an ability to correlate brain functional areas.

With the exception of certain highly specialized cranial structures such as the hippocampus or the corpus callosum, areas of brain function are much more loosely associated with discrete structures in the cortex than, say, the association between areas of body movement and the attendant muscles that allow it. Applicants therefore respectfully submit that Vilsmeier, being directed specifically towards body structure data, does not teach or suggest the more specialized and unique challenges associated with mapping or estimating areas of brain function from a reference head to a second head. Applicants therefore respectfully submit that neither Fox nor Vilsmeier teach or suggest “scaling location data of said at least one functional area of said first head in three dimensional spate to correlated with said external dimensions of second head, thereby defining the locations of the at least one functional area in said second head” as required by independent claim 1.

Not Obvious to Combine

Applicants further submit that, insofar as Vilsmeier teaches a tool for use in assistance with surgery, the error tolerances for brain and neuro surgery are so minimal, and the degree of precision required for both structural and functional mapping so high that absent a specific discussion of brains and brain functional areas in Vilsmeier it is unreasonable to infer that Vilsmeier’s teachings translate clearly, easily, or readily to the highly delicate and intricate practice of neurological functional mapping.

Applicants therefore submit, in view of the foregoing, that a simple combination of the teachings of Fox and Vilsmeier is neither appropriate nor complete with respect to the limitations of independent claim 1. The particular nature of brain function and its relationship to brain structure create a host of specialized concerns that are neither obviously nor easily resolved by

Fox or Vilsmeier absent specific teachings to the contrary. Applicants therefore respectfully submit that the Examiner fails to establish a *prima facie* case of obviousness with respect to independent claim 1, with neither reference teaching or suggesting, either alone or in combination (assuming the references may be combined, which Applicants do not admit), “scaling location data of said at least one functional area of said first head in three dimensional spate to correlated with said external dimensions of second head, thereby defining the locations of the at least one functional area in said second head” as required by independent claim 1 and all claims depending therefrom.

Claims 2 – 5 and 7 – 17

Applicants respectfully submit that claims 2 – 5 and 7 – 17 are allowable at least by virtue of their dependency from independent claim 1.

Summary

At least in view of the above, Applicants respectfully submit that neither Fox nor Vilsmeier, taken either alone or in combination (assuming the references may be combined, which Applicants do not admit) teach or suggest all the limitations of independent claim 1 or any claims depending therefrom. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

35 U.S.C. § 103 Rejection – Krause

Claim 6 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Fox in view of Vilsmeier in further view of Krause et al. (U.S. Patent 6,711,432). Insofar as it pertains to the presently pending claims, Applicants respectfully traverse this rejection.

Applicants respectfully submit that claim 6 is allowable at least by virtue of its dependency from independent claim 1. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

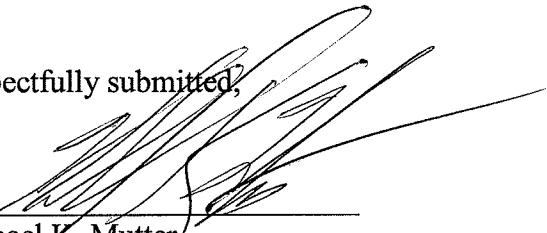
In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Naphtali Y. Matlis, Reg. No. 61,592, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: December 2, 2008

Respectfully submitted,

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